

## CLIMATOLOGICAL DATA FOR NOVEMBER, 1911.

## DISTRICT NO. 3, OHIO VALLEY.

Prof. FERDINAND J. WALZ, District Editor.

## GENERAL SUMMARY.

The weather during November, 1911, was remarkably cold, cloudy, wet, and windy, and there was a marked deficiency in sunshine. Precipitation either as rain or snow, or both, was frequent, although the aggregate amount was not excessive in any section of the district. The distribution was quite uniform over the district and through the month. Snowfall was unusually frequent, and was considerable in amount for this month over the mountain sections of the district and over the States north of the Ohio River. The month as a whole was rather unfavorable for outdoor work. The gathering of corn was delayed in northern sections by wet fields and by the frequent rain and snow; also there was considerable damage to sugar beets and late potatoes in the ground by freezing in the early part of the month.

Three or four general storms with steep gradients of pressure passed over the district during the month, causing stress of weather and marked changes in temperature. The most noteworthy event of the month, however, was the intense cold wave and high wind which swept over the entire district on the 11th-12th, when the temperature fell 50° or more in a few hours and winds of destructive force were experienced in practically all parts of the district. In the western portions of Tennessee and Kentucky and over the greater portions of Illinois and Indiana the losses by the winds and the storms at this time were especially heavy, amounting to many hundred thousands of dollars.

## TEMPERATURE.

The temperature averaged from 2.4° to 5.5° below the normal for November for the States or parts of States comprising the district, the lesser departures occurring, as a rule, in the State of Ohio and the greater in the lower Ohio Valley proper, although deficiencies about as great occurred at numerous places from the upper Wabash Valley in the north to the Tennessee Valley of Alabama in the south. The warmest weather occurred about the 11th, when maximum temperatures for the various States of the district ranged from 67° in western New York to 85° in Kentucky, the latter being registered at Hopkinsville, Ky., on the 11th. The coldest day was the 13th, when minimum temperatures for the various States ranged from 5° to 13°, the lowest being 5° at Burke's Garden, Va.

The month began unusually cold, and during the first 4 days the daily mean temperature ranged from 4° to 20° below normal, and minimum temperatures registered from 5° to 20° below freezing in all parts of the district, while at quite a few stations a temperature as low as 10° was reached. There was a marked change to warmer on the 6th, and during the following 5 or 6 days the temperature

was mostly above normal. On the 10th and 11th the temperature was remarkably high, being from 10° to 20° above the normal for the season. During the afternoon of the 11th and the night of the 11th-12th a severe cold wave attended by high winds swept over the district, causing a fall in temperature of 50° and over in a few hours and a fall of 60° to 70° by the morning of the 13th. There was a gradual warming up in the period 15th-17th, and on the 17th temperatures were generally above normal, but there was a quick reaction to colder on the 18th and during the remainder of the month the temperature was below normal every day in amounts ranging from 2° to 24°, except on the 26th and 27th, when it was slightly above normal over all except the southeastern portion. The last two days of the month were notably cold, although not so severe as during the period 12th-14th.

## PRECIPITATION.

The precipitation was slightly below normal over most of the northeastern portion of the district and over Illinois. It was above normal over the remainder of the district, although at only a few scattered places did the excess amount to as much as 1 inch. The amounts at the various stations ranged between 2 and 4 inches, except that amounts ranging between 4 and 6 inches were received at most stations in Kentucky and Tennessee and at a few stations in southern Indiana. Precipitation was unusually well distributed through the month. In some sections, notably western Pennsylvania, western New York, West Virginia, and Kentucky, precipitation occurred nearly every day, yet, in the main, precipitation occurred in five well-defined periods, viz., 5th-7th, 11th-13th, 17th-18th, 23d-24th, and 28th-29th. Quite heavy precipitation occurred generally on the 6th, 12th, 17th, and 18th. In addition to the above periods, general and quite heavy rains occurred over the southern and southeastern portions of the district on the 8th-9th and over much of Kentucky on the 4th.

Considerable snow fell over western New York, western Pennsylvania, Ohio, and Indiana, during one or more of the first 3 days of the month; snow flurries occurred in Indiana and Kentucky on the 8th and 9th; snowfall ranging in amount from a trace to 3 inches daily occurred over the central, northern, and eastern sections of the district in the period 12th-15th, and in varying amounts over sections north of Tennessee on the 16th-19th and during the last decade of the month, except on the 26th and 27th. Snow fell in the mountain sections of southwestern Virginia on the 12th, 13th, and 14th, and in the mountain sections of North Carolina and Virginia on the 19th, 21st, 24th, 25th, and the 28th to 30th. Snow flurries occurred in the northern portion of Alabama and Georgia on the 24th, 29th, and 30th. The total snowfall of the month ranged from a trace in

the lower basin of the Tennessee and Cumberland Rivers to from 3 to 11.5 inches over the watersheds of the upper Ohio River and the headwater tributaries.

Sleet storms caused considerable delay to traffic in Kentucky and bordering States on the 12th, 14th, and 23d. Thunderstorms occurred on the 1st in Illinois; on the 4th in Tennessee; on the 6th in Illinois, Indiana, Ohio, Kentucky, West Virginia, and Tennessee; on the 7th and 9th in Illinois; on the 10th and 11th in Illinois, Indiana, Ohio, Kentucky, and West Virginia; on the 12th in Kentucky and Tennessee; on the 18th in Tennessee, and on the 17th and 20th in Illinois. Several of these storms were attended by destructive winds, causing large damage over considerable areas.

#### DESTRUCTIVE STORM AND COLD WAVE OF THE 11TH-12TH.

This storm developed over the central Rocky Mountain region during the 10th and swept over the Central States during the 11th-12th. The path of the storm center extended eastward from Colorado to northwestern Missouri, thence northeastward across the upper Mississippi Valley and northern Lake Michigan to Ontario. A long and rather narrow but deep trough of low pressure extended southward to the Gulf States. The temperature gradient attending the disturbance was remarkably steep, as instanced by the fact that at 8 p. m., seventy-fifth meridian time, of the 11th, the temperature in the lower Ohio Valley registered from 72° to 76°, while at St. Louis it was 48°, at Kansas City 16°, and Dodge City, Kans., 12°. At Little Rock, Ark., it was 78°, and at Fort Smith, only about 150 miles to the westward and in the same State, it was 34°.

High winds attended the storm throughout its passage, continuing generally for many hours, while maximum velocities of from 50 to 70 miles per hour were reached at many places. Thunderstorms and severe wind squalls immediately preceded the break in temperature and resulted in much destruction to property in many sections, but especially in the region lying nearer the track of the center of the main storm. The rapid fall in temperature which immediately followed the passage of the storm trough soon changed the rain into sleet and snow. Brief summaries of some of the damage in this district follow:

*Tennessee.*—In Nashville and vicinity the estimated damage to property is placed at between \$50,000 and \$60,000. At Forest Grove, about

15 miles north of Nashville, a schoolhouse, 10 residences, and 14 barns were wrecked. Three persons were seriously injured and several head of stock were crippled, and over 70,000 pounds of tobacco materially damaged. At Mackenzie a handsome new residence which had only been completed and occupied a week was completely demolished, the occupants barely escaping with their lives; also a large roller mill, the city water tank, and a number of business houses were unroofed and a large amount of timber and many telegraph and telephone poles were blown down. At Union City on a farm belonging to Henry Garrigan the storm blew down the residence and barn. At Hygeia Springs a hotel was unroofed, 2 residences were blown down, and a large tobacco barn was struck by lightning and burned, together with a large crop of tobacco. A large number of forest and shade trees were uprooted, and some were twisted off near the ground. The damage to property in this section is estimated at from \$15,000 to \$20,000. At Lawrenceburg, Camden, Lebanon, and various other places the reports say that thousands of dollars damage was done by this storm. At Ducktown the lightning struck a house, and Miss Mary Long was instantly killed and another young lady and a baby seriously injured.

*Kentucky.*—Property damage throughout the State, especially in the western portion, was great, and the loss will probably run up into the hundreds of thousands of dollars. Houses and barns were unroofed, trees blown down, and the telephone and telegraph wires put out of commission. Louisville was cut off from communication with many of the larger cities of the State for several hours. The severe cold wave which so closely followed the storm caused great suffering.

*Illinois.*—Many small buildings, barns, windmills, etc., were either blown down or damaged by the storm. Telephone, telegraph, and railroad service was greatly hindered. The loss in many localities amounted to from \$5,000 to \$10,000.

*Indiana.*—The windstorm on the evening of the 11th caused extensive damage in many places, and the damaged areas were not confined to any particular portion of the State. The most important damage was about as follows: Bedford, about 15 stone mills were more or less damaged, 2 being completely wrecked. Many other buildings were unroofed or otherwise damaged, telephone and telegraph lines were blown down, and many smokestacks were leveled to the ground. The estimated loss in this vicinity is about \$200,000. Lafayette, the electric-light wires were broken by the wind and the city was in darkness for quite a while. A lady who was attending the theater at the time the storm broke was so badly frightened that she died suddenly on the street on her way home. Two garages were wrecked and the roofs of many stores were blown off. Considerable damage was done at the experiment station located at Purdue University. Heavy losses were reported from Shelby County, where houses and barns were demolished, orchards ruined, and live stock killed, besides much suffering was caused by the snow and cold which followed the storm. The Lutheran Church at Waldron and several houses were badly damaged. At Shoals the loss was estimated at \$25,000, including damage to a mill, store, church, high school, courthouse, and the bridge across White River. A dwelling house and barn also were demolished and 10 cows which were in the latter were killed. At Terre Haute 6 persons were injured. One was caught in the débris of his house, which was demolished; 2 were injured while in a caboose which was blown from the railroad track and fell down an embankment, and 3 were occupants of a buggy which was wrecked. Several houses northeast of the city were destroyed and a school building badly damaged. Many buildings were destroyed or partly wrecked at other places throughout the State, and considerable damage to shipping was reported from points along the Ohio River.

TABLE 1.—Climatological data for November, 1911. District No. 3, Ohio Valley.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.							Prevailing wind direction.	Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmeasured.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.			
<i>New York.</i>																					
Allegany.	Cattaraugus.	1,441	5	35.0	.....	67	11	13	13	41	3.28	.....	0.90	9.4	18	3	10	17	nw.	Charles E. Whitney.	
Bolivar.	Allegany.	1,800	17	5	37.0*	60	11†	9	13	42	3.45	.....	0.70	2.8	18	7	8	15	w.	B. O. Newton. John W. Alles.	
Olean.	Cattaraugus.	3	3	.....	.....	.....	.....	.....	.....	.....	2.84	.....	.....	.....	.....	.....	.....	.....	.....		
<i>Pennsylvania.</i>																					
Aleppo.	Greene.	1,135	10	38.3	- 2.8	69	11†	10	13	49	2.88	+ 0.98	0.65	2.0	9	4	7	10	nw.	J. S. Hinerman.	
Baldwin.	Butler.	1,404	5	37.0*	60	11†	9	13	42	3.45	.....	0.60	10.8	12	1 <sup>a</sup>	2 <sup>a</sup>	15	3	26	w.	S. H. Templeton.
Beaver Dam.	Beaver.	674	17	.....	.....	.....	.....	.....	.....	.....	2.49	- 0.21	0.89	.....	.....	.....	.....	.....	sw.	U. S. Engineer.	
Brookville.	Jefferson.	1,173	0	35.0	.....	64	11	10	13	37	2.15	- 1.07	0.55	2.1	10	13	2	0	28	w.	H. C. Bartholomew.
Clarion.	Washington.	1,078	7	38.6	.....	70	12	11	13	50	2.57	.....	0.68	6.5	10	7	12	11	w.	J. A. Miller.	
Claysville.	Somerset.	1,127	3	38.6	.....	70	12	11	13	50	2.08	- 1.09	0.68	0.5	9	1	6	23	ne.	E. T. Buchanan.	
Confluence.	Franklin.	1,352	26	.....	.....	.....	.....	.....	.....	.....	0.85	0.42	7.0	19	4	3	23	w.	Grant Pyle.		
Venango.	Armstrong.	955	37	35.8	- 3.9	73	1	13	13	43	3.65	.....	0.85	4.1	16	3	2	25	.....	F. E. Dixon.	
Freeport.	Greene.	772	38	.....	.....	.....	.....	.....	.....	.....	2.91	- 0.22	0.75	T.	13	3	4	23	sw.	Mrs. Anna R. Burtner.	
Greensburg.	Greenville.	768	22	.....	.....	.....	.....	.....	.....	.....	2.30	- 0.55	0.48	.....	.....	.....	.....	.....	sw.	James G. Cramer.	
Indiana.	Mercer.	950	15	36.0	- 2.4	72	11	13	13	48	3.11	+ 0.30	0.65	13.0	10	9	4	17	nw.	A. M. Orr.	
Johnstown.	Indiana.	1,350	14	37.5	- 3.6	68	11	13	13	44	3.25	+ 0.39	0.65	2.5	12	7	8	15	w.	R. W. Wehrle.	
Cambria.	Cambridge.	1,184	23	38.9	- 2.7	66	11	13	13	44	3.12	- 0.08	0.92	3.2	16	4	12	14	nw.	E. C. Lorentz.	
Loch No. 4.	Washington.	718	25	.....	.....	.....	.....	.....	.....	.....	2.61	- 0.08	0.61	1.8	12	3	9	18	s.	R. T. McGowan.	
Lycopsis.	Westmoreland.	1,420	19	38.1	- 3.9	70	11	11	13	49	2.89	+ 0.35	0.68	3.5	10	11	2	8	20	w.	Murray Forbes.
Pittsburgh.	Allegheny.	842	41	39.3	- 3.6	69	11	13	13	52	2.02	- 0.53	0.58	5.0	11	13	0	11	19	sw.	U. S. Weather Bureau.
Saeerstown.	Crawford.	1,116	20	35.8	- 2.8	68	12	10	22	48	3.24	- 0.21	0.70	14.0	13	13	13 <sup>b</sup>	0 <sup>b</sup>	15 <sup>b</sup>	sw.	J. G. Apple.
Skidmore.	Lawrence.	1,000	7	34.4 <sup>b</sup>	.....	64	11†	9	14	48	.....	.....	0.85	10.2	10	9	3	16	14	nw.	W. H. Stoner.
Somerset.	Somerset.	2,250	55	34.8	- 3.8	71	11	13	13	45	2.92	- 0.52	0.88	1.5	9	8	14	19	nw.	W. M. Schrock.	
Uniontown.	Fayette.	999	23	39.6	- 3.6	73	11	14	13	36	3.12	- 0.23	0.68	0.00	11.4	17	6	0	24	nw.	Wm. Hunt.
Warren.	Warren.	1,137	22	35.8	- 3.2	69	26	13	13	34	3.02	+ 0.14	.....	.....	.....	.....	.....	.....	.....	.....	Anna Simpson.
<i>Maryland.</i>																					
Deer Park.	Garrett.	2,457	17	36.0	- 2.0	77	11	6	13	53	2.56	+ 0.08	1.05	6.5	10	10	1	15	15	w.	S. P. Specht.
Grantsville.	do.	2,351	17	35.0	- 4.6	69	11	9	13	44	2.48	- 0.08	0.90	6.5	8	6	9	15	w.	J. S. Miller.	
Oakland.	do.	2,461	11	35.6	.....	74	11	8	13	49	2.39	.....	1.23	4.8	12	4	12	14	w.	R. E. Weber.	
<i>West Virginia.</i>																					
Bancroft.	Putnam.	574	10	42.8	.....	83	11	15	13	42	3.97	+ 1.56	0.90	2.8	10	9	0	21	ne.	R. E. Dent.	
Beckley.	Raleigh.	2,440	12	38.6	- 3.9	72	11	13	13	47	2.32	+ 0.05	1.41	3.0	5	7	18	w.	John A. Ewart.		
Bens Run.	Pleasants.	622	10	40.2	- 2.9	70	12	15	13	48	3.32	+ 0.86	0.75	4.0	8	18	5	7	.....	J. D. Riggs.	
Bluefield.	Mercer.	2,563	17	41.6	- 2.8	75	11	10	13	38	2.92	+ 0.49	0.90	.....	6	11	5	14	.....	Norfolk & Western R. R.	
Buckhannon.	Upshur.	1,472	20	39.7	- 1.4	75	11	10	13	49	3.01	- 0.46	1.20	3.0	7	11	7	12	.....	H. A. Darnall.	
Cairo.	Ritchie.	667	10	43.3	- 0.1	70	12	13	3	35	1.76	- 0.83	0.71	4.0	5	0	13	17	w.	Van A. Zevely.	
Central Station.	Doddridge.	900	11	.....	72 <sup>b</sup>	11	.....	.....	.....	.....	2.05	- 0.49	.....	.....	.....	.....	.....	.....	.....	.....	G. W. Sherwood.
Charleston.	Kanawha.	598	24	46.4	.....	79	11	16	13	50	3.94	+ 1.04	1.59	1.5	10	13	5	12	w.	R. C. Hewes.	
Creston.	Wirt.	612	11	40.6	- 3.6	70	11†	15	13	44	3.57	+ 1.38	1.33	1.3	9	4	17	w.	J. M. Reed.		
Cuba.	Jackson.	544	10	40.8	- 2.3	73	12	12	3	51	2.98	+ 0.98	0.91	1.0	9	6	16	8	nw.	C. T. Perry.	
Elkhorn <sup>a</sup> .	McDowell.	1,933	19	42.3	- 3.6	75	12	9	14	43	1.54	- 1.13	0.55	1.2	12	6	7	17	w.	U. S. Weather Bureau.	
Elkins.	Randolph.	1,940	13	38.0	- 1.5	75	11	10	13	52	2.75	- 0.11	1.17	2.5	14	1	11	11	w.	H. Glenn Fleming.	
Fairmont.	Marion.	879	18	.....	.....	.....	.....	.....	.....	.....	1.89	- 0.93	0.81	T.	10	6	7	21	sw.	John Holt.	
Glenville.	Gilmer.	738	23	42.5	- 0.8	78	11	14	13	48	2.92	- 0.11	0.67	1.5	8	7	2	21	w.	Joseph Gerken.	
Grafton.	Taylor.	985	18	42.2	- 0.8	79	11	14	13	51	1.91	- 1.10	0.96	1.0	5	12	8	10	w.	Arthur George.	
Green Sulphur Springs.	Summer.	1,600	10	39.9	- 2.9	73	11	14	34	40	2.92	+ 0.92	1.41	1.8	11	9	7	14	w.	J. B. Lavender.	
Hinton.	do.	1,400	21	41.0	- 3.9	72	10	15	13	35	2.98	+ 0.74	0.92	0.5	14	11	3	16	w.	L. H. Hutchinson.	
Huntington.	Cabell.	510	17	41.0	- 2.5	68	11	17	13	34	3.34	+ 0.56	1.24	2.0	7	10	4	16	w.	Geo. T. Argabrite.	
Lewisburg.	Greenbrier.	2,200	11	39.0	- 2.4	69	11	11	13	42	3.02	+ 0.50	1.56	T.	5	16	8	6	nw.	Geo. A. Deem.	
Logan.	Logan.	665	10	.....	.....	.....	.....	.....	.....	.....	1.99	- 0.55	1.09	3.0	3	11	1	12	.....	Allen Smith.	
Lost Creek.	Harrison.	1,033	15	38.8	- 3.5	77	11	11	13	47	2.09	- 0.34	0.71	T.	5	10	4	16	w.	S. E. Bradley.	
Madison.	Boone.	704	8	.....	.....	.....	.....	.....	.....	.....	2.91	+ 0.08	0.82	3.4	10	6	6	18	w.	Jas. A. Morgan.	
Mannington.	Marion.	967	10	40.0	.....	75	11	14	13	46	2.51	+ 0.30	0.74	1.8	11	8	7	15	w.	C. J. McCarty.	
Marlinton <sup>b</sup> .	Pocahontas.	2,169	17	39.1	+ 0.7	69	11†	13	13	53	3.66	+ 0.89	1.73	0.2	9	6	3	9	w.	Horace Atwood.	
Morgantown.	Monongalia.	1,250	38	40.5	- 2.9	73	11	12	13	50	1.98	- 1.07	0.65	T.	4	14	10	3	w.	M. L. Brown.	
Moundsville.	Marshall.	640	10	40.9	- 1.7	71	12	14	13	48	1.81	+ 0.27	0.68	T.	6	11	4	15	w.	Frank S. Evans.	
New Cumberland.	Hancock.	987	14	39.6	- 1.3	75	10	12	13	52	2.49	+ 0.66	0.80	T.	5	6	4	20	s.	Wm. Ankron.	
New Martinsville.	Wetzel.	634	18	40.8	- 3.6	71	12	11	13	48	3.12	+ 0.51	0.88	T.	6	10	4	16	s.	Miss Donna Tully.	
Nuttallburg.	Fayette.	2,252	18	.....	.....	.....	.....	.....	.....	.....	1.99	- 0.55	1.09	3.0	3	11	1	12	.....	U. S. Weather Bureau.	
Parkersburg.	Wood.	634	24	40.8	- 2.5	72	11	15	13	51	2.91	+ 0.08	0.82	3.4	10	6	6	18	w.	J. W. Swisher.	
Parsons.	Tucker.	1,602	12	42.0	.....	75	11	15	13	48	3.56	+ 0.73	0.98	1.0	11	7	2	21	se.	W. D. Holmes.	
Philippi.	Barbour.	1,192	18	40.8	- 0.2	78	11	11	3	51	2.87	- 0.08	0.91	3.9	10	5	12	13	nw.	D. H. Hamrick.	
Pickens.	Randolph.	2,785	20	37.6	- 2.9	73	11	10	22	49	5.54	+ 2.01	1.99								

TABLE 1.—Climatological data for November, 1911. District No. 3—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.								Precipitation, in inches.								Sky.	Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmeasured.	Number of rainy days, 0.01 inch or more.	Number of partly cloudy days.	Number of cloudy days.						
<b>Ohio—Continued.</b>																							
Clarington.	Monroe.	600	8	39.3	—	70	12	11	13	40	3.06	—	0.80	0.3	10	6	9	15	sw.	Col. S. Tschapat.			
Columbus.	Franklin.	918	33	38.2	—	3.2	70	12	14	13	54	2.71	—	0.40	1.14	3.0	12	6	8	16	w.	U. S. Weather Bureau.	
Coshocton.	Coshocton.	770	2																			Mrs. Ada Jeffries.	
Dayton (1).	Montgomery.	899	38.0																				U. S. Weather Bureau.
Dayton (2).	do.	790	30	37.7	—	4.4	69 <sup>d</sup>	11	13	13	51 <sup>b</sup>	2.46	—	0.54	0.80	70	6						Mrs. Edith L. Boyer.
Delaware.	Delaware.	927	14	37.6	—	2.7	68	11 <sup>c</sup>	13	13	48	2.15	—	0.34	0.70	4.0	12	9	6	15	w.	DeWitt H. Leas.	
Demos.	Belmont.	1,325	23	36.8 <sup>a</sup>	—	4.7	68 <sup>a</sup>	12	10	13	50 <sup>a</sup>	3.58	+	1.15	0.76	4.5	16	7	10	13	sw.	J. T. Dysart.	
Dennison.	Tuscarawas.	846	1	33.6	—																		Water Supply Co.
Frankfort.	Ross.	745	19	38.1	—	4.3	64	8 <sup>f</sup>	14	13	39	1.93	—	0.53	0.90	T.	5	10	3	17	w.	O. A. Cory.	
Garretttsville.	Portage.	1,005	27	35.8	—	2.6	68	12	12	13	50	3.48	+	0.46	0.82	11.5	14	4	7	19	w.	S. M. Luther.	
Granville.	Licking.	960	29	37.5	—	2.5	67	12	12	13	49	3.25	+	0.08	1.08	4.3	8	12	5	13	sw.	Dr. L. E. Davis.	
Gratiot.	do.	1,000	22	38.6	—	2.4	67	11	12	13	47	2.53	—	0.21	0.90	3.1	11	5	15	10	w.	W. B. Longstreth.	
Green.	Adams.	500	18	40.0	—	4.2	66	6	10	13	28	3.03	+	0.09	2.00	T.	3	5	12	13	w.	W. F. Kenyon.	
Green Hill.	Columbiana.	1,135	17	35.8	—	2.8	68	12	10	13	51	2.44	+	0.24	0.70	8.6	12	7	9	14	sw.	Jos. E. Bentley.	
Greenville.	Darke.	1,060	25	36.5	—	3.8	68	11 <sup>c</sup>	10	13	54	3.29	+	0.08	1.01	1.5	9	8	13	9	w.	Geo. A. Katzenberger.	
Hamilton.	Butler.	601																				Earl W. Stout.	
Haydenville.	Hocking.	700		39.2	—																	H. W. Stiers.	
Hillsboro.	Highland.	1,083	32	38.8	—	3.4	70	11	12	13	50	3.69	+	0.56	1.25	3.0	8	5	10	15	sw.	Carey H. Roush.	
Ironton.	Lawrence.	575	28	42.2	—	1.8	74 <sup>a</sup>	11	10 <sup>b</sup>	13	46	3.49	+	0.73	1.37	0.5	10	11	4	15	sw.	James Bull.	
Jacksonburg.	Butler.	975	43	38.8	—	2.6	67	11	11	13	34	2.98	—	0.15	1.05	5.0	6	4	10	16	sw.	Dr. J. B. Owsley.	
Kenton.	Hardin.	1,015	19	35.4	—	4.8	68	12	9	13	52	2.74	—	0.74	1.10	2.0	8	6	9	15	w.	N. S. Martin.	
Killbuck.	Holmes.	1,087	19	37.1	—	2.7	70	11	8	13	49	3.43	+	0.98	0.90	6.9	13	15	4	11	ne.	Lloyd C. Schonauer.	
Lancaster.	Fairfield.	898	16	39.8	—	2.4	69	11 <sup>c</sup>	14	13	49	2.69	—	0.04	0.81	4.5	8	7	9	14	sw.	R. L. Renshaw.	
McConnelsville.	Morgan.	710	27	40.6	—	1.4	67	11 <sup>c</sup>	19	12	51	3.67	+	0.83	0.99	2.2	10	8	6	16	s.	C. H. Morris.	
Marietta.	Washington.	627	91	41.2	—	1.5	68	12	14	13	48	3.33	+	0.34	0.80	4.5	12	10	8	12	sw.	Prof. T. D. Biscoe.	
Marion.	Marion.	980	33	37.2	—	3.2	67	10 <sup>c</sup>	10	13	48	3.28	+	0.66	1.05	4.1	8	2	14	14	sw.	Dr. E. H. Raftensperger.	
Millfordton.	Knox.	1,200	19	36.4	—	2.4	66	10 <sup>c</sup>	12	14	50	1.99	—	0.33	0.79	5.0	5	9	11	11	sw.	L. H. Burgess.	
Milligan.	Perry.	875	18	38.5	—	2.5	79	10	11	13	50	2.84	+	0.60	0.95	2.0	8	8	12	10	sw.	V. C. Eveland.	
Millport.	Columbiana.	1,145	18	36.1	—	3.0	68	12	10	13	50	2.22	—	0.14	0.70	2.7	14	1	11	18	sw.	G. F. Copeland.	
Nelle.	Coshcocton.	850	11	38.2	—	1.9	70	11	19	12	41	2.66	+	0.10	0.88	1.0	7	7	14	9	sw.	Ethel L. Gamertsfelder.	
New Alexandria.	Jefferson.	1,050	26	38.8	—	2.4	68	7 <sup>f</sup>	9	13	30	2.10	—	0.64	1.00	3.0	7	12	3	15	n.	Mrs. Mary K. Pennell.	
New Berlin.	Stark.	1,100	18	35.8	—	3.5	64	11 <sup>c</sup>	9	13	44	2.58	+	0.27	0.73	4.5	12	10	2	18	sw.	Clayton Holl.	
New Waterford.	Columbiana.	1,053	16	36.2	—	3.2	68	12	11	13	51	2.73	—	0.00	1.00	5.5	7	6	12	12	sw.	Sam C. Scott.	
Ohio State University.	Franklin.	757	28	38.4	—	2.0	71	12	14	13	52	2.41	—	0.28	0.93	—	9	6	4	20	w.	Prof. H. C. Lord.	
Pataskala.	Licking.	1,015	19	37.2	—	3.3	69	12	12	13	51	3.38	+	0.43	1.12	4.1	13	3	14	13	w.	J. N. Ridenour.	
Peebles.	Adams.	645	1	40.4	—																	Ora O. Smalley.	
Philo.	Muskingum.	1,018	16	38.5	—	4.5	68	12	11	13	51	2.05	—	0.15	0.72	1.7	8	8	11	11	nw.	L. C. Burckholter.	
Piqua.	Miami.	847	1																			Harry L. Roberts.	
Plattsburg.	Clark.	1,130	18	36.7	—	4.4	68	12	11	13	51	2.27	—	0.64	0.81	5.5	7	10	8	12	w.	F. E. Stewart.	
Portsmouth.	Scioto.	527	30	41.7	—	3.0	74	11	15	13	50	3.43	+	0.47	0.74	—	10	10	6	14	w.	Dr. H. A. Shiffrmann.	
Prospect.	Marion.	909	1																			Neil J. Gast.	
Rittman.	Wayne.	990	19	37.1	—	2.7	64	12	11	13	54	3.00	+	0.17	1.02	4.5	11	2	17	w.	J. B. Gish.		
Shenandoah.	Richland.	1,100	19	35.8	—	3.0	67	11	10	13	52	2.53	+	0.19	0.81	6.5	10	2	16	12	s.	T. B. Arnett.	
Sidney.	Shelby.	985	28	37.8	—	2.8	68	11 <sup>c</sup>	10	13	50	3.33	+	0.08	0.90	3.7	12	8	4	18	s.	Hamline B. Blake.	
Somersett.	Perry.	1,080	12	38.4	—	4.8	67	10 <sup>c</sup>	12	12	49	1.51	—	1.06	0.98	4.5	5	8	12	10	sw.	Miss M. W. C. Sheridan.	
Springfield.	Clark.	980	17																			W. A. Webster.	
Summerfield.	Noble.	1,187	5	38.4	—																	H. R. McClintock.	
Syracuse.	Meigs.	583	1																			E. G. Campbell.	
Thurman.	Gallia.	690	18	41.0	—	2.4	74	11	13	48	2.97	+	0.43	1.00	T.	5	5	9	16	sw.	D. D. Thomas.		
Urbania.	Champaign.	1,031	43	36.6	—	3.4	68	10	10	13	52	2.53	+	0.25	0.94	5.0	10	2	19	9	sw.	Prof. J. H. Williams.	
Warren.	Trumbull.	900	22	36.6 <sup>b</sup>	—	3.7	67 <sup>a</sup>	12	14 <sup>b</sup>	13	44 <sup>a</sup>	2.61	+	0.13	0.53	7.3	13	2	18	sw.	M. D. McCorkle.		
Waoverly.	Pike.	590	28	38.3	—	2.5	73	11	13	13	51	2.90	+	0.06	1.03	2.0	8	12	0	18	s.	Dr. Peru Hutt.	
Waynesville.	Warren.	700	26	38.4	—	3.4	68	11	12	13	50	2.51	—	0.64	1.04	1.0	6	8	8	14	sw.	Charles Michener.	
Westerly.	Wayne.	1,030	32	36.8	—	3.0	65	10	10	13	44	2.50	—	0.24	0.81	4.4	11	3	2	25	sw.	Experimentation.	
Youngstown.	Mahoning.	946	18																			G. R. Pattont.	
Zanesville.	Muskingum.	700	24																			S. G. Sprague.	
<b>Indiana.</b>																							
Anderson.	Madison.	893	16	36.8	—	5.5	70	11	11	13	54	3.28	+	0.28	1.34	7.5	7	10	8	12	sw.	W. H. Stanton.	
Attica.	Fountain.	523	1																			Robt. E. Ray.	
Bloomington.	Monroe.	744	16	35.5	—	8.8	75	11	11	13	54	2.95	—	0.36	0.82	1.3	11	12	5	13	sw.	Earl E. Ramsey.	
Bluffton.	Wells.	835	16	36.5	—	3.4	72	11	10	13	53	3.18	+	0.29	0.64	1.7	16	13	7	10	sw.	Tom R. Johnson.	
Butterville.	Jennings.	767	26	36.6	—	3.7	72	11	12	13	57	4.88	+	1.13	1.87	2.5	9						

TABLE 1.—Climatological data for November, 1911. District No. 3—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.							Sky.	Prevailing wind direction.	Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmeted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.				
<i>Indiana—Continued.</i>																						
Scottsburg.	Scott.	570	17	41.6	-3.3	72	11†	15	13	52	3.51	+ 0.46	1.60	1.0	7	8	6	16	s.	Frank H. Park.		
Seymour.	Jackson.	610	24	40.2	-3.3	74	11	13	13	52	3.57	+ 0.09	1.16	0.2	7	9	9	12	sw.	J. Robt. Blair.		
Shelbyville.	Shelby.	768	7	38.0	.....	70	11†	12	13	55	3.62	.....	1.10	1.2	8	4	19	7	sw.	Edgar G. Hodgson.		
Shoals.	Martin.	523	4	.....	.....	.....	.....	.....	.....	3.95	.....	1.40	1.0	7	4	11	11	sw.	Rev. G. Halleck Rowe.			
Terre Haute.	Vigo.	498	21	38.3	-6.1	75	11	12	13	59	3.80	+ 0.59	1.58	0.6	8	15	4	11	sw.	Prof. R. G. Gillum.		
Weedersburg.	Fountain.	612	12	37.7	-4.5	75	11	13	13	59	2.85	+ 0.70	0.87	1.5	8	15	7	8	s.	L. A. Culver, Jr.		
Vevay.	Switzerland.	525	30	42.7	-2.4	74	11	18	13	45	5.90	+ 2.54	2.10	T.	5	5	8	17	sw.	Miss Frederica Boerner.		
Vincennes.	Knox.	431	19	38.2	-3.6	76	11	12	13	34	3.82	+ 0.30	1.12	T.	9	9	3	18	w.	Garrett V. List.		
Washington.	Daviess.	484	15	39.4	-6.4	76	11	13	13	54	3.14	0.00	1.14	.....	7	6	3	21	sw.	Charles C. Feagans.		
Westhollow.	Boone.	529	3	34.6	.....	72	11	10	13	33	3.58	.....	1.21	4.0	12	4	21	5	sw.	Clyde O. Laughner.		
Winona Lake.	Kosciusko.	865	4	36.2	.....	71	11	10	13	54	5.28	.....	1.80	8.2	12	1	21	8	w.	Rev. Albert A. Young.		
Worthington.	Greene.	526	29	38.6	-4.4	75	11	12	13	56	3.55	-0.15	1.03	1.5	7	8	10	12	sw.	D. W. Solliday.		
<i>Illinois.</i>																						
Albion.	Edwards.	531	20	39.8	-3.8	76	11	10	13	58	2.92	-0.53	1.05	1.3	6	9	12	9	sw.	B. F. Michels.		
Carmi.	White.	399	.....	.....	.....	.....	.....	.....	.....	3.57	.....	1.37	3.1	6	10	14	6	sw.	Daniel Berry.			
Casey.	Clark.	720	26	37.8	-4.3	75	11	13	13	58	2.84	-0.42	0.98	1.5	10	8	10	12	w.	William Chenoweth.		
Charleston.	Coles.	604	10	37.2	-2.5	75	11	11	13	59	3.36	+ 0.17	1.19	3.2	9	14	3	13	w.	Jacob B. Daisy.		
Danville.	Vermilion.	421	13	43.1	-4.5	77	11†	15	13†	60	3.06	-0.01	1.19	T.	8	14	1	15	n.	Dr. L. W. Gordon.		
Equality.	Gallatin.	495	18	40.5	-4.6	76	11	12	13	58	2.91	-0.43	1.20	0.5	11	9	5	16	nw.	George A. Tromly.		
Fairfield.	Wayne.	495	25	38.4	-4.1	75	11	13	13	59	2.91	-0.20	1.15	1.0	5	11	7	12	nw.	Joseph S. Peak.		
Flora.	Clay.	500	33	.....	.....	84	11	14	14	53	4.00	-0.20	1.57	T.	7	9	7	14	nw.	Dr. D. Lawrence.		
Golconda.	Pope.	715	10	35.9	-4.8	74	11	10	13	57	3.54	+ 0.93	1.40	3.2	10	12	6	12	nw.	S. F. Hoskinson.		
Hooperston.	Vermilion.	462	28	40.5	-4.2	76	11	13	13	59	3.07	-0.39	1.23	0.4	8	13	7	10	s.	Prof. W. C. Fairweather.		
McLeansboro.	Hamilton.	346	.....	.....	.....	.....	.....	.....	.....	3.32	.....	0.99	T.	7	8	10	10	s.	Prof. M. N. McCartney.			
Metropolis.	Massac.	599	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. C. Spitzer.		
Montrose.	Erlingham.	424	10	38.6	-4.9	74	11	14	13†	54	3.36	-0.36	1.14	2.3	12	10	2	18	.....	Mrs. H. M. Phillips.		
Mount Carmel.	Wabash.	556	16	42.0	-5.1	77	11†	11	29	62	2.14	-1.20	0.90	T.	4	21	1	8	s.	Thomas H. McCabe.		
New Burnside.	Johnson.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. M. Hicks.		
Newton.	Jasper.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Victor E. Phillips.		
Olney.	Richland.	486	24	40.6	-3.4	80	11	13	13	59	3.03	-0.47	0.95	2.7	8	6	14	10	sw.	Duane Shaw.		
Palestine.	Crawford.	500	29	38.6	-4.2	75	11	11	13	61	2.26	-1.34	0.98	1.0	5	8	14	14	sw.	H. P. Twyman.		
Paris.	Edgar.	600	18	36.5	-5.4	74	11	10	13	39	3.00	-0.31	0.95	3.5	7	10	17	3	nw.	H. A. Burr.		
Philo.	Champaign.	700	27	35.2	-4.2	74	11	11	13	37	2.82	-0.27	0.79	2.6	10	11	8	11	nw.	William Breiner.		
Rantoul.	do.	708	20	36.0	-3.7	75	11	9	13	60	3.24	+ 0.58	1.15	2.5	7	13	5	12	nw.	W. H. Thornberry.		
Rileyville.	Saline.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mrs. Katie Payne.		
Robinson.	Crawford.	500	11	.....	.....	74	11	12	12	61	2.39	.....	1.02	0.5	6	10	13	7	s.	O. A. Fyffe.		
Sumner.	Lawrence.	459	5	39.2	.....	74	11	14	12	61	2.39	.....	1.02	0.5	6	10	13	7	s.	E. W. Lester.		
Tuscola.	Douglas.	614	18	.....	.....	75	11	9	12	34	2.83	+ 0.63	1.05	2.5	9	1	21	8	sw.	Prof. J. G. Mosier.		
Urbana.	Champaign.	725	10	35.0	-5.7	75	11	9	12	34	2.83	+ 0.63	1.05	2.5	9	1	21	8	sw.	.....		
<i>Kentucky.</i>																						
Alpha.	Clinton.	17	45.8	-3.2	68	11	18	13	30	5.47	+ 1.41	1.85	1.0	6	11	1	18	w.	W. W. Hicks.			
Anchorage.	Jefferson.	700	10	39.2	-4.9	72	11	13	13	50	3.71	+ 0.78	1.70	T.	6	10	2 <sup>a</sup>	17 <sup>a</sup>	nw.	C. E. Barrett.		
Bardstown.	Nelson.	637	14	41.4	-5.2	75	11	14	13	33	5.12	+ 1.74	2.25	0.5	7	10	1	19	sw.	G. M. Talbott.		
Beattyville.	Lee.	650	7	39.4	.....	73	10†	13	13	49	4.70	+ 1.73	1.44	3.0	12	5	10	10	e.	G. W. Cann.		
Beaver Dam.	Ohio.	441	8	40.8	.....	75	11	15	13	41	5.03	.....	2.10	T.	8	12	8	10	w.	W. T. Austin.		
Berea.	Madison.	1,070	10	42.4	-4.3	72	12	12	13	50	4.96	+ 2.16	2.13	1.4	9	7	3	20	nw.	C. F. Rumold.		
Bowling Green.	Warren.	500	22	42.2	-4.7	75	11	13	40	50	5.60	+ 1.54	2.25	2.25	8	12	0	18	s.	Mrs. L. G. Causey.		
Burnside.	Pulaski.	773	20	.....	.....	76	11	14	13	50	5.06	.....	4.12	+ 0.45	0.88	0.5	11	9	7	14	ne.	G. M. Estes.
Calhoun.	McLean.	397	8	43.2	.....	76	11	14	13	50	5.06	.....	2.23	T.	8	7	0	14	nw.	W. A. Taylor.		
Catlettsburg.	Boyd.	544	22	.....	.....	76	11	16	13	37	5.34	+ 0.96	0.96	1.5	10	11	3	16	w.	Mrs. Mertie M. Bruns.		
Earlington.	Hopkins.	370	21	41.4	-6.3	76	11	14	13	37	5.34	+ 0.96	2.49	T.	8	13	0	18	nw.	Miss Lee Ray.		
Edmonton.	McCalfe.	600	20	42.6	-4.2	74	6	12	13	31	5.01	+ 1.11	1.59	1.6	10	12	0	18	s.	Miss Katie Payne.		
Eubank.	Pulaski.	1,177	17	41.0	-3.7	70	11	12	13	39	4.03	+ 0.91	1.00	1.0	1	1	5 <sup>a</sup>	19 <sup>a</sup>	nw.	J. V. Oldham.		
Falmouth.	Pondleton.	530	22	.....	.....	76	11	12	13	51	3.71	+ 0.09	1.20	T.	6	9	5 <sup>a</sup>	19 <sup>a</sup>	sw.	Miss Gertrude Sorrell.		
Farmers.	Rowan.	668	5	42.3	.....	75	11	12	13	52	5.07	.....	2.15	.....	5	14	2	14	w.	W. F. Randle.		
Frankfort.	Franklin.	560	20	43.4	-2.8	73	11	13	13	41	4.87	+ 1.46	2.36	1.2	7	12	2	16	n.	J. H. Roberts.		
Franklin.	Simpson.	691	17	43.9	-4.3	72	11†	13	13	50	6.03	+ 2.07	2.05	T.	7	6	14	10	nw.	J. E. Newman.		
Greensburg.	Green.	581	19	39.4	-5.3	72	17	11	13†	45	5.77	+ 2.09	2.00	0.5	10	12 <sup>a</sup>	0 <sup>a</sup>	17 <sup>a</sup>	n.	L. C. Alcorn.		
High Bridge.	Jessamine.	702	8	44.8	-3.3	82	11	15	13	51	4.80	+ 0.91	1.80	1.0	8	11	3	16	.....	Miss Lulu Wood.		
Hopkinsville.	Christian.	524	15	44.8	-3.3	82	11	15	13	51	4.62	+ 0.14	2.20	T.	7	12	2	16	w.	W. F. Randle.		
Irvington.	Breckenridge.	13	41.8	-4.3	73	11	15	13	53	4.32	+ 0.92	1.95	T.	5	11	0	14	s.	W. J. Piggott.			
Leitchfield.	Grayson.	635	23	42.0	-4.6	72	11	14	13	50	4.83	+ 0.40	1.51	T.	12	2	16	n.	John E. Stone.			
Lexington.	Fayette.	889	23	39.8	-4.9	71	11	13	13	56	3.84	+ 0.36	1.56	1.6	10	5	6	19	w.	U. S. Weather Bureau.		
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TABLE 1.—Climatological data for November, 1911. District No. 3—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.					Precipitation, in inches.					Sky.	Prevailing wind direction.	Observers.			
				Mean.	Departure from the normal.		Highest.	Date.	Lowest.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.				
					Highest.	Date.													
<b>Tennessee—Continued.</b>																			
Dickson.	Dickson.	800	15	46.4	— 2.8	79	6	15	13†	44	5.11	+ 1.09	2.41	...	6	10	7	13	s.
Dover.	Stewart.	500	16	44.8	— 3.6	78	11	17	13†	45	6.14	+ 1.59	2.50	T.	6	12	3	15	s.
Dunlap.	Sequatchee.	726	2	46.0	...	79	17	18	13	46	5.68	...	1.38	T.	11	11	7	12	...
Elizabethhton.	Carter.	1,575	21	...	...	...	...	...	...	...	...	...	...	...	6	15	1	14	e.
Erasmus.	Cumberland.	1,850	14	41.6	— 3.1	71	6	14	13	46	4.72	+ 1.12	1.44	0.2	8	15	6	9	se.
Florence.	Rutherford.	580	29	45.8	— 2.8	72	6	17	13	40	5.65	+ 0.62	1.62	1.0	7	12	5	13	s.
Franklin.	Williamson.	648	21	45.9	— 2.0	74	6	17	13	42	4.94	+ 1.44	1.98	T.	7	13	2	15	...
Halls Hill.	Rutherford.	9	...	...	...	...	...	...	...	...	...	...	...	...	1.61	T.	7	13	n.
Hartman.	Roane.	841	16	44.4	— 3.0	72	11	17	13†	34	5.09	+ 1.67	1.50	T.	9	9	17	4	...
Hohenwald.	Lewis.	983	25	46.2	— 2.1	76	6	14	30	48	5.60	+ 1.62	2.10	T.	10	12	8	10	sw.
Iron City.	Lawrence.	600	14	45.6	— 4.1	76	6	13	30	40	5.24	+ 0.91	1.50	0	5	6	17	7	sw.
Jefferson City.	Jefferson.	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Johnson City.	Washington.	1,620	15	42.2	— 3.7	77	11	12	13	39	3.03	+ 0.03	0.83	T.	12	3	13	14	w.
Johnsonville.	Humphreys.	364	15	45.8	— 3.4	77	11	17	13†	49	5.88	+ 1.52	2.56	T.	11	12	4	14	s.
Kingston.	Roane.	20	...	...	...	...	...	...	...	...	...	...	...	...	9	11	0	19	...
Knoxville.	Knox.	977	40	44.5	— 2.6	72	12	17	13	50	4.37	+ 0.77	1.07	1.0	10	7	14	9	sw.
Lebanon.	Wilson.	522	2	46.0	...	77	6	16	13	45	4.65	...	2.00	T.	9	11	4	15	s.
Lewisburg.	Marshall.	727	16	46.8	— 2.8	79	6	16	30	47	4.34	+ 1.30	1.34	0.1	13	16	3	11	so.
Livingston.	Overtown.	1,065	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Loudon.	Loudon.	816	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lynville.	Giles.	770	23	44.6	— 4.3	73	6	18	13	30	3.84	+ 0.51	1.29	T.	7	4	18	8	n.
McGhee.	Monroe.	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
McMinnville.	Warren.	1,011	27	45.8	— 2.6	74	6	15	13†	43	5.19	+ 1.55	1.47	1.6	9	8	12	10	nw.
Maryville.	Blount.	1,050	15	45.0	— 3.5	72	12	12	13	41	4.85	+ 1.73	1.12	T.	8	16	4	10	w.
Mountain City.	Johnson.	2,486	14	41.8	— 0.6	78	11	13	22	44	2.71	+ 0.34	1.23	T.	6	17	9	4	...
Nashville.	Davidson.	654	40	44.9	— 3.8	76	6	18	13	52	4.38	+ 0.53	1.88	T.	10	10	6	14	nw.
Newport.	Cooke.	1,280	21	45.0	— 1.1	71	12	19	13	39	3.47	+ 0.74	0.68	T.	10	8	2	20	w.
New River.	Scott.	1,215	4	45.0	— 1.1	71	12	19	13	39	3.35	...	0.90	1.5	6	13	2	15	w.
Palmetto.	Bedford.	770	18	45.6	— 4.8	77	16	18	25†	42	4.06	+ 1.14	1.33	T.	9	12	8	10	s.
Pinewood.	Hickman.	4	144.5	— 7.8	78	6	13	30	4.75	...	2.34	...	...	...	...	...	...	...	...
Pope.	Perry.	400	14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rogersville.	Hawkins.	1,150	26	43.6	— 2.6	71	11	16	13	38	4.20	+ 1.33	0.96	T.	14	15	7	8	w.
Rugby.	Morgan.	1,410	23	41.6	— 3.1	68	12†	10	13	45	4.20	+ 0.64	1.52	1.5	11	8	4	18	n.
Savannah.	Hardin.	442	27	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sevierville.	Sevier.	5	44.2	— 4.0	75	12	17	13	44	4.00	+ 0.35	0.95	2.0	11	4	11	15	n.	
Sewanee.	Franklin.	2,000	15	43.3	— 4.9	69	16	20	13	32	2.80	+ 0.85	0.5	8	10	5	15	sw.	
Sparta.	White.	920	5	44.4 <sup>d</sup>	...	73	6	16	13	44 <sup>d</sup>	2.87	...	0.7	...	...	...	...	...	w.
Springville.	Henry.	377	8	44.6	...	77	11	15	13	52	5.45	...	1.88	T.	10	13	5	12	n.
Tazewell.	Clayborne.	14	40.2	— 6.0	72	12	12	13	39	4.13	+ 0.96	1.24	0.5	T.	9	3	18	sw.	
Tullahoma.	Coffee.	1,075	23	45.2	— 1.9	74	6	15	13	43	4.52	+ 1.11	1.20	0.3	9	7	17	6	s.
Walling.	White.	909	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Waynesboro.	Wayne.	753	25	45.7	— 2.9	76	6	14	30	48	4.56	+ 1.07	1.69	T.	9	11	4	15	s.
Widlersville.	Henderson.	400	14	47.4	— 2.6	78	6	18	13†	52	4.43	+ 0.53	1.60	T.	8	6	13	13	...
Worsham.	Summer.	550	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	w.
Yukon.	Lincoln.	850	14	45.2	— 6.0	74	6	15	13	37	4.87	+ 1.29	1.16	T.	6	14	6	10	n.
<b>Alabama.</b>																			
Bridgeport.	Jackson.	660	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	r. l. Moore.
Decatur.	Morgan.	573	29	46.1	— 5.7	76	6	19	30	42	3.62	+ 0.29	0.99	T.	10	15	0	15	n.
Florence.	Lauderdale.	563	27	45.2	— 5.8	76	6	17	30	37	4.06	+ 0.99	0.00	T.	7	17	2	11	e.
Guntersville.	Marshall.	530	1	47.6	...	84	7	20	13	46	4.26	...	0.94	T.	10	9	6	11	...
Madison.	Madison.	573	17	44.7*	— 6.8	77	6	11	25	43	3.01	+ 0.02	0.71	T.	5	13	7	10	n.
Riverton.	Colbert.	360	14	43.8	— 6.3	78	6	11	30	44	4.45	+ 1.09	1.34	T.	7	15	3	12	n.
Scottsboro.	Jackson.	652	28	47.0	— 3.2	78	15	19	25	42	3.62	+ 0.04	1.00	T.	10	10	2*	17*	se.
Tuscumbia.	Colbert.	488	29	45.8	— 5.4	77	6	19	30	39	3.00	+ 0.10	0.70	0	8	11	2	17	se.
<b>Georgia.</b>																			
Diamond.	Gilmer.	2,020	21	44.4*	— 4.2	71	16	17*	13	40	4.88	+ 1.12	1.03	T.	9	14	5	22	n.
Mineral Bluff.	Fannin.	1,571	...	44.2	...	70	11†	16	13†	45	3.44	...	1.22	T.	8	5	22	3	n.
<b>North Carolina.</b>																			
Altapass.	Mitchell.	2,629	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	w. j. Woodward.
Andrews.	Cherokee.	1,800	1	46.0	...	77	16	16	25	50	4.87	...	1.13	T.	11	14	12	4	n.
Asheville.	Buncombe.	2,255	32	41.8	— 3.3	70	11	13	13	48	2.20	— 1.10	1.62	T.	10	12	8	10	nw.
Banners Elk.	Avery.	3,750	3	36.6	...	68	11	8	13	44	3.66	...	1.07	2.0	9	13	6	11	w.
Blowing Rock.	Watauga.	4,090	3	40.8*	...	60	28	8	13	40	...	...	...	...	...	...	...	...	w.
Bryson City.	Transylvania.	2,230	10	41.8	— 3.1	66	11†	11	30	40	4.96	+ 1.78	1.50	0	6	16	13	1	s.
Swain.	Cullowhee.	2,000	23	44.0	...	71	11	14	25†	46	3.93	...	0.91	T.	9	16	1	13	nw.
Eagles Nest.	Jackson.	2,100	1	44.0	...	71	11	14	25†	46	3.93	...	0.91	T.	9	16	1	13	nw.
Haywood.	Haywood.	5,050	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	nw.
Hendersonville.	Henderson.	2,167	15	41.8	— 4.7	67	10†	15	13	42	3.88	+ 0.96	0.97	0	12	17	5	8	nw.
Highlands.	Macon.	3,670	21	42.8	— 2.9	72	11	13	13	38	3.88	+ 1.39	1.04	T.	10	12	5	13</td	

TABLE 2.—*Daily precipitation for November, 1911. District No. 3, Ohio Valley.*

TABLE 2.—*Daily precipitation for November, 1911. District No. 3—Continued.*

TABLE 2.—*Daily precipitation for November, 1911. District No. 3—Continued.*

Stations.	Watershed.	Day of month.																												Total			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
<i>Indiana—Contd.</i>																																	
Paoli.....	E. Fork White.....																																2.75
Princeton.....	Wabash.....																															3.32	
Richmond.....	Whitewater.....																															2.62	
Rochester.....	Wabash.....	.20																														4.50	
Rockville.....																																2.94	
Rome.....	Ohio.....																															4.54	
Salamonia.....	Wabash.....																																
Salem.....	Ohio.....																																
Scottsburg.....	E. Fork White.....																															4.61	
Seymour.....	E. Fork White.....																															3.51	
Shelbyville.....																																3.57	
Shoals    .....																																3.62	
Terre Haute.....	Wabash.....																															3.95	
Weedersburg.....																																2.85	
Vevney.....	Ohio.....																															5.90	
Vincennes    .....	Wabash.....																															3.82	
Washington.....	W. Fork White.....																															3.14	
Whitestown    .....																																3.58	
Winona Lake.....	Wabash.....	T. .09																														5.28	
Worthington.....	W. Fork White.....																															3.55	
<i>Illinois.</i>																																	
Albion.....	Wabash.....																															2.92	
Carmi.....																																3.57	
Casey.....																																2.84	
Charleston.....																																3.36	
Danville.....																																3.06	
Equality.....	Ohio.....																																
Fairfield.....	Wabash.....																																
Flora.....																																2.91	
Golconda.....	Ohio.....																															4.00	
Hoopeston.....	Wabash.....																															3.54	
McLeansboro.....	Ohio.....																															3.07	
Metropolis.....																																3.32	
Montrose.....	Wabash.....																																
Mount Carmel    .....																																3.36	
New Burnside.....																																2.14	
Newton.....	Ohio.....																																
Olney.....	Wabash.....																															3.03	
Palestine.....																																2.26	
Paris.....																																3.00	
Philo.....																																2.82	
Bantoul.....																																3.24	
Rileyville.....	Ohio.....																															2.55	
Robinson.....	Wabash.....																																
Sumner.....																																2.39	
Tuscola.....																																	
Urbana.....																																2.83	
<i>Kentucky.</i>																																	
Alpha.....	Cumberland.....																															5.37	
Anchorage.....	Ohio.....																															3.71	
Bardstown.....	Salt.....																															5.12	
Beattyville.....	Kentucky.....																															4.70	
Beaver Dam.....	Green.....																															5.03	
Berea.....	Kentucky.....																															4.96	
Bowling Green.....	Cumberland.....																															5.60	
Burnside.....																																4.12	
Calhoun.....	Green.....																															5.06	
Catlettsburg.....	Big Sandy.....																															4.32	
Earlington.....	Green.....																															5.34	
Edmonton.....																																5.01	
Eubank.....	Cumberland.....																															4.03	
Falmouth.....	Licking.....																															3.71	
Farmers.....																																5.07	
Frankfort.....	Kentucky.....																															4.87	
Greensburg.....	Green.....																															6.03	
High Bridge.....	Kentucky.....																															5.77	
Hopkinsville.....	Cumberland.....																															4.62	
Ivington.....	Ohio.....																															4.32	
Leitchfield.....	Green.....																															4.83	
Lexington.....	Kentucky.....																															3.84	
Loretto.....	Salt.....																															3.83	
Louisville.....	Ohio.....																															3.79	
Marion.....																																3.83	
Maysville.....	T. .04																															3.83	
Middlesboro.....	T. .24																															4.63	
Owensboro.....	Cumberland.....																															4.98	
Paducah.....																																	



TABLE 3.—*Maximum and minimum temperatures at selected stations for November, 1911. District No. 3, Ohio Valley.*

Date.	Pennsylvania.				West Virginia.										Ohio.													
	Greenville.		Pittsburgh.		Charleston.		Elkhorn.		Elkins.		Glenville.		Huntington.		Morgan-		Parkers-		Wheel-		Canton.		Cincinnati.		Columbus.		Dayton.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	49	38	48	41	58	48	60	45	50	43	62	46	55	46	54	44	54	40	53	46	57	40	51	31	51	33	48	28
2....	45	27	41	29	55	31	51	30	43	21	50	18	40	31	46	28	40	29	45	32	46	30	40	27	36	28	36	26
3....	45	24	41	27	47	24	48	19	44	15	55	27	44	22	42	20	43	22	48	21	50	27	43	24	41	24	41	24
4....	48	26	52	34	56	35	51	33	52	27	57	40	50	26	53	29	50	34	58	23	49	34	47	38	46	35	45	36
5....	49	31	52	40	59	42	62	38	56	39	58	42	55	42	54	39	55	41	59	37	55	40	53	40	53	40	53	40
6....	53	32	59	45	63	46	60	44	59	47	59	40	61	45	55	47	60	45	56	40	57	43	67	47	61	44	63	46
7....	56	42	59	43	65	48	60	42	59	38	61	45	59	49	59	45	58	42	53	38	57	42	66	44	51	41	50	40
8....	43	32	46	40	62	36	55	33	44	32	51	31	48	35	45	32	46	34	48	34	49	39	46	37	48	37	48	37
9....	48	26	50	39	72	41	53	41	55	41	62	39	58	37	52	40	56	42	56	34	52	34	56	40	54	36	54	36
10....	63	42	63	49	75	45	62	40	64	38	68	45	67	44	64	49	68	51	66	41	70	42	67	54	66	53	66	53
11....	72	40	69	50	79	45	64	42	75	32	78	37	68	44	73	23	72	45	70	42	67	49	71	57	70	52	69	57
12....	67	19	69	17	78	28	75	32	68	16	75	27	45	45	71	20	56	42	69	18	70	17	70	16	68	15	68	15
13....	26	13	22	13	32	16	48	10	23	10	27	14	29	17	26	12	26	15	20	13	26	13	29	15	25	14	25	13
14....	33	16	36	19	49	24	43	9	40	14	38	18	43	18	48	16	42	20	13	34	21	41	25	34	24	34	25	34
15....	41	26	43	32	56	41	54	30	47	37	52	35	50	28	43	27	50	35	49	24	45	30	53	31	43	28	46	28
16....	34	23	34	26	55	32	53	40	39	24	50	28	55	32	53	28	56	26	42	26	44	29	35	25	40	24	34	24
17....	41	23	54	29	60	32	63	32	54	21	59	34	65	31	55	26	52	32	45	27	53	30	64	36	57	32	57	34
18....	50	32	54	33	69	37	63	32	56	33	61	36	50	38	57	33	56	36	43	29	53	33	63	40	52	32	40	32
19....	34	28	34	29	51	35	57	30	37	30	47	34	45	34	41	32	42	34	40	30	40	29	42	32	37	28	38	27
20....	41	25	42	31	54	36	57	30	46	30	50	30	51	35	43	29	47	34	45	27	41	31	46	32	41	31	40	31
21....	39	29	34	38	50	34	55	20	30	25	48	31	38	33	48	29	35	28	37	29	38	27	38	30	35	30	36	30
22....	38	28	37	38	46	26	62	20	47	18	42	18	42	25	42	23	42	23	41	23	41	26	43	27	39	28	40	27
23....	39	31	52	35	63	35	55	32	57	25	56	32	53	26	54	30	54	34	58	27	62	32	45	30	45	33	40	29
24....	38	29	42	27	62	29	55	22	50	24	52	29	52	30	51	28	42	29	34	33	40	30	31	27	33	28	32	26
25....	34	24	33	24	40	27	55	20	33	22	35	29	50	27	51	26	36	27	36	26	36	25	41	24	35	25	37	23
Mns.	44.4	27.5	46.4	32.2	58.3	34.5	55.3d	29.3d	48.5	27.6	53.5	31.5	49.4	32.6	50.0	31.0e	49.1	32.4	48.6	29.6	48.1	31.2	48.6	32.6	45.2	31.3	45.2	30.7
Date.	Ohio.				Indiana.										Kentucky.													
	Marion.		Waverly.		Butlerville.		Evansville.		Indianapolis.		Kokomo.		Rockville.		Worthington.		Philo, Ills.		Beattyville.		Bowling Green.		Earlington.		Greensburg.		Lexington.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	55	31	57	40	52	39	50	30	47	26	46	31	47	30	49	36	44	29	64	40	57	41	51	35	60	39	53	35
2....	50	25	47	27	42	22	38	25	37	22	37	21	37	20	40	22	35	20	44	25	44	24	43	25	40	24	38	24
3....	46	21	45	19	45	18	42	27	39	24	39	18	35	19	41	19	37	19	55	16	49	23	41	21	60	19	42	24
4....	47	29	49	34	47	33	43	38	45	36	45	29	41	34	46	36	47	32	48	22	49	34	44	30	48	19	43	37
5....	56	37	55	39	54	37	57	31	54	37	51	39	52	37	47	39	51	39	59	37	59	40	58	36	58	35	55	40
6....	59	41	65	44	66	46	67	50	60	46	62	44	48	44	63	46	57	43	68	40	72	45	71	40	66	47	66	47
7....	58	43	61	45	56	40	58	45	50	40	52	40	48	38	53	36	50	35	64	35	60	34	60	40	56	42	56	42
8....	46	32	47	32	55	34	54	34	48	38	49	30	50	34	51	35	50	31	49	31	50	39	53	36	49	34	47	39
9....	51	30	57	38	52	36	57	41	54	36	55	30	50	33	51	32	52	38	54	34	57	42	62	50	59	36	54	43
10....	67	47	70	52	66	40	64	57	66	47	62	49	63	51	62	42	73	41	65	45	69	47	68	44	64	53	63	53
11....	66	57	73	41	76	58	75	40	73	51	74	55	75	60	75	61	74	50	73	38	75	55	76	61	69	45	71	56
12....	67	19	72	21	74	17	40	17	51	14	70	13	66	13	72	16	50	13	34	30	32	22	29	21	32	30	30	14
13....	40	10	30	13	28	12	30	17	28	12	25	9	40	9	29	12	27	11	38	13	32	13	36	14	33	11	28	13
14....	30	19	35	20	36	21	48	30	39	25	31	20	44	23	42	25	37	24	52	15	52	20	50	18	53	11	49	25
15....	42	25	53	28	52	30	62	35	43	26	38	21	36	25	41	27	36	24	44	29	70	30	51	34	49	31	41	32
16....	38	16	48	23	47	22	51	30	42	25	38	12	39	21	46	23	42	22	55	24	62	29	63	27	57	27	48	28
17....	45	29	60	30	56	36	63	36	56	32	54	32	39	34	58	40	57	32	72	23	69	39	65	51	72			

TABLE 3.—*Maximum and minimum temperatures at selected stations, November, 1911. District No. 3—Continued.*

Date.	Kentucky.						Tennessee.										Decatur, Ala. §§		Asheville, N. C.		Virginia.							
	Louisville.		Mays- ville. §§	Williams- burg. §§		Chatta- nooga.		Johnson City. §§		Knoxville.		Nashville.		Palmetto.		Sparta.		Waynes- boro.				Big Stone Gap.		Wythe- ville.				
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
1....	50	34	59	45	57	31	64	46	58	50	58	45	58	40	61	38	59	45	59	40	63	46	55	41	60	49	54	38
2....	40	26	44	27	50	33	46	35	41	40	45	30	44	26	44	23	51	27	49	27	60	43	45	25	51	33	42	27
3....	44	27	50	19	57	20	45	32	51	20	44	29	49	29	50	28	51	30	50	28	57	30	46	21	51	24	45	18
4....	45	41	48	20	59	33	44	38	52	22	50	35	47	40	63	37	53	34	51	37	53	31	46	32	53	33	50	28
5....	57	42	60	38	60	34	54	42	66	36	62	41	59	43	66	43	70	44	66	36	63	31	63	43	64	41	60	35
6....	69	50	70	42	65	40	66	52	58	39	65	50	76	52	77	54	73	53	76	53	76	40	56	46	56	49	55	45
7....	59	45	62	46	59	41	66	52	66	49	67	50	61	50	63	45	63	41	63	43	63	49	64	45	65	58	61	40
8....	52	42	48	33	63	38	52	45	48	39	59	45	51	45	50	45	52	40	51	45	52	48	50	39	56	36	47	36
9....	57	42	56	34	65	39	54	45	65	40	54	46	57	46	55	47	56	45	55	47	57	48	54	39	55	43	45	37
10....	65	57	67	43	70	41	61	52	63	43	66	51	66	57	70	55	69	39	71	55	71	53	68	45	61	52	58	39
11....	74	59	75	45	40	35	68	55	77	40	69	54	74	58	72	60	66	55	72	62	73	57	70	42	66	41	73	34
12....	74	20	32	31	38	25	73	24	71	43	72	22	73	21	70	30	72	28	74	26	38	34	67	19	69	30	67	17
13....	30	17	33	13	63	15	37	18	35	12	34	17	33	18	35	22	45	16	36	17	38	20	40	13	35	15	52	13
14....	48	28	44	14	70	25	49	31	56	17	55	29	53	29	55	27	54	28	53	29	57	20	47	28	49	26	39	21
15....	57	33	58	27	69	42	66	38	58	33	63	39	65	44	67	35	.....	67	35	65	31	59	39	60	45	55	35	
16....	49	30	51	25	65	29	68	40	63	36	64	40	66	38	74	32	.....	71	31	70	34	65	39	60	31	57	32	
17....	65	37	67	24	55	33	66	42	67	35	70	40	70	42	71	50	72	.....	70	49	75	33	60	39	66	31	59	32
18....	46	33	49	34	57	33	58	39	52	40	55	39	56	31	57	32	.....	63	30	58	35	57	38	35	34	59	37	
19....	45	36	45	30	55	34	60	45	43	34	52	40	54	37	65	32	.....	29	60	33	63	34	47	32	48	35	39	31
20....	48	34	48	34	58	32	66	45	57	31	62	41	56	39	65	33	62	32	66	41	67	33	63	26	56	40	52	26
21....	38	29	38	29	56	40	51	33	44	32	46	31	49	31	49	28	58	28	51	29	52	33	39	29	42	32	36	27
22....	45	27	49	23	46	39	52	30	48	22	48	28	54	28	56	26	55	23	57	27	59	29	45	23	44	21	41	19
23....	45	30	50	23	50	15	48	39	55	22	46	30	48	30	50	32	51	40	50	40	48	34	47	28	50	28	50	27
24....	30	25	31	27	53	19	47	27	35	23	46	26	30	24	35	25	48	25	43	33	30	47	20	48	25	46	23	
25....	43	24	40	22	57	20	48	24	34	24	42	24	48	22	47	18	44	18	50	16	60	21	42	19	37	22	33	20
26....	58	36	57	22	58	40	59	28	40	22	55	30	58	37	59	27	57	21	60	27	62	20	52	29	48	19	46	27
27....	55	40	57	26	58	38	50	32	61	24	52	31	57	38	58	25	53	36	55	22	57	24	56	25	54	22	56	22
28....	49	27	51	27	43	37	54	32	62	28	52	32	51	26	45	31	55	34	52	30	42	30	58	32	57	42	56	37
29....	27	23	29	25	40	31	32	23	29	28	32	24	26	21	31	22	34	22	32	22	27	22	32	19	44	25	37	20
30....	40	22	40	21	56	21	40	21	35	19	36	21	42	20	41	18	39	20	43	14	37	19	37	17	26	23	27	18
Mns..	50.1	33.9	50.3	28.9	56.4	31.8	54.8	36.8	53.0	31.4	53.7	35.3	54.4	35.4	56.7	34.6	56.4	32.4	57.1	34.3	56.5	33.7	52.6	31.0	52.3	32.9	49.8	28.7

<sup>a</sup>, <sup>b</sup>, <sup>c</sup>, etc., indicate respectively 1, 2, 3, etc., days missing from the record.

§ Data are from standard instruments not supplied by the U. S. Weather Bureau.

§§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.